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09/786,604	11/29/2001	Gerhard Ritter	12758-020001	1457

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EXAMINER	
NG, CHRISTINE Y	

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/786,604	Applicant(s) RITTER, GERHARD	
	Examiner Christine Ng	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11-14* is/are rejected.

7)☒ Claim(s) *9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/03/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 8 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,385,456 to Menzel.

Referring to claims 1 and 12, Menzel discloses in Figures 2, 4 and 5 a method of measuring transmission characteristics of radio channels in a radio communications system having a number of base stations (Figure 5, BTS1-BTS3) and a radio station (Figure 5, MS), the radio communications system utilizing a timeslot structure (Figure 2) in a time frame for transmitting data. The method comprises:

Transmitting data as bursts (Figure 2, any of time slots TN0-TN7) from one of the base stations to the radio station, each burst having a channel measurement sequence (Figure 2, training sequence TSC), the one of the base stations transmitting the channel measurement sequence in at least one timeslot (Figure 4, time slots with hatching from left bottom to top right) in which no data is transmitted from the one of the base stations to a radio station. In Figure 4, the time slots with hatching from the left bottom to the top right are used for monitoring the neighboring cells and not for data transmission. Bursts

carrying monitoring information are identified by the control bit on each side of the TSC. Refer to Column 4, lines 4-17 and Column 5, lines 26-59.

Referring to claim 3, Menzel discloses in Figure 2 that the channel measurement sequence (TSC) is transmitted in the middle of a burst (any of time slots TN0-TN7). "In the center of the normal burst there is a 26-bit long training sequence TSC which serves to dimension the channel and/or estimate the channel impulse response of the transmission channel" (Column 4, lines 9-12).

Referring to claim 8, Menzel discloses in Figures 2 and 4 that a channel measurement sequence (Figure 2, TSC) in a predetermined timeslot (Figure 4, time slots with hatching from left bottom to top right) in the time frame has a special identifier (Figure 2, control bit CB). "On each side of the training sequence TSC there is a control bit CB which indicates whether the normal burst contains data or monitoring information" (Column 4, lines 12-14). Refer to Column 5, lines 26-59.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,385,456 to Menzel in view of U.S. Patent No. 6,381,260 to Bahrenburg et al.

Referring to claim 2, Menzel does not disclose that the channel measurement

sequence is transmitted using at least one of (i) a constant power level and (ii) a number of base stations at the same time.

Bahrenburg et al disclose in Figure 9 that the channel measurement sequence (midamble) is transmitted using a constant power level (mean power level m). Refer to Column 8, lines 58-67. The midamble is a training sequence transmitted in each burst of information and used "to estimate the channel impulse responses for various transmission channels" (Column 1, lines 58-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the channel measurement sequence is transmitted using a constant power level, the motivation being in order to transmit the midamble at a different power level than the data, thereby allowing the system to support multiple subscriber signals. Refer to Column 8, lines 54-67.

Referring to claim 5, Menzel does not disclose that cyclic correlation is used for channel measurement.

Bahrenburg et al disclose in Figure 9 that all subscribers of a system use a connection specific midamble to estimate channel impulse responses, which is derived from rotating the basic midamble code to the right and periodically expanding it. Since one basic midamble code is used by a plurality of connections, the receiving end tunes into the base station by cyclically searching for its particular rotated midamble sequence. Refer to Column 1, lines 58-65; Column 3, lines 36-42; and Column 8, lines 41-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that cyclic correlation is used for channel

measurement, the motivation being so that the same basic midamble code can be used by all mobile stations in a system; thereby simplifying the system since all mobile stations tune into the same basic midamble training sequence.

Referring to claim 6, Menzel does not disclose that individual base stations use a same channel measurement sequence.

Bahrenburg et al disclose in Figure 9 that all subscribers of a system use a connection specific midamble to estimate channel impulse responses, which is derived from rotating the basic midamble code to the right and periodically expanding it. Refer to Column 1, lines 58-65; Column 3, lines 36-42; and Column 8, lines 41-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that individual base stations use a same channel measurement sequence, the motivation being so that the same basic midamble code can be used by all mobile stations in a system; thereby simplifying the system since all mobile stations tune into the same basic midamble training sequence.

Referring to claim 7, Menzel does not disclose that the channel measurement sequence is transmitted with a different code phase by different base stations.

Bahrenburg et al disclose in Figure 9 that all subscribers of a system use a connection specific midamble to estimate channel impulse responses, which is derived from rotating the basic midamble code to the right with a different code phase (W*m chips) and periodically expanding it. Refer to Column 1, lines 58-65; Column 3, lines 36-42; and Column 8, lines 41-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the channel

measurement sequence is transmitted with a different code phase by different base stations, the motivation being so that the same basic midamble code can be used by all mobile stations in a system; thereby simplifying the system since all mobile stations tune into the same basic midamble training sequence.

5. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,385,456 to Menzel.

Referring to claim 4, Menzel does not specifically disclose that the base stations are synchronized.

However, Menzel discloses that "during the transmission of the data, the mobile station observes the radio field conditions of the adjacent base stations so that, if appropriate, a handover to another base station can be performed on the basis of these measurements" (Column 1, lines 63-66). Base stations need to be synchronized in order to perform handover. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the base stations are synchronized, the motivation being in order to perform handover.

Referring to claim 11, Menzel does not specifically disclose that the predetermined timeslot is a 0-th timeslot.

However, Menzel discloses that the predetermined timeslots used for sending monitoring information and not data is chosen based on a "permanently agreed plan" and are "preferably ones which can be used for monitoring bursts of a block". Refer to Column 5, lines 35-59. Menzel discloses that the predetermined timeslot for transmitting the monitoring information can be any timeslot within the frame. Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the predetermined timeslot is a 0-th timeslot, the motivation being that that the predetermined timeslot for transmitting the monitoring information can be any timeslot within the frame.

6. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,385,456 to Menzel in view of U.S. Patent No. 6,351,458 to Miya et al.

Referring to claim 13, Menzel does not disclose that the radio communication system is a TDD radio communication system.

Miya et al disclose in Figure 9 that in TDD, "the same radio frequency F3 (803) is time shared to transmission/reception to carry out communication". Refer to Column 1, lines 46-49. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the radio communication system is a TDD radio communication system, the motivation being that as compared with FDD, TDD offers more efficient use of the spectrum and bandwidth since each user is allocated only one channel and is comparatively more flexible, less complex and cheaper.

Referring to claim 14, Menzel does not disclose that the radio communication system is a FDD radio communication system.

Miya et al disclose in Figure 9 that in FDD, "a radio frequency F1 (801) for a down circuit is different from a radio frequency F2 (802) for an up circuit". Refer to Column 1, lines 42-46. Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to include that the radio communication system is a FDD radio communication system, the motivation being that as compared with TDD, FDD does not introduce latency between the transmit and receive cycles, allows transmission and reception at the same time, and avoids propagation delays that limit the distance between the user and the station.

Allowable Subject Matter

7. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng
November 15, 2004

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